

# PowerLogic™ DM6000 Series Digital Meters

## Quick Start Guide

PLSED309040EN


08/2010



SECTION 1: BEFORE YOU BEGIN

Read and follow all safety precautions and instructions before installing and working with this equipment.

Safety Precautions

 **⚠ DANGER**

**HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

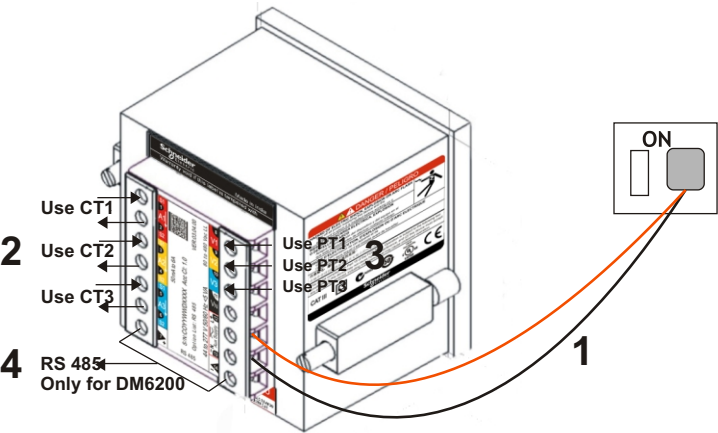
- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. In the USA, see NFPA 70E.
- Only qualified electrical workers should install this equipment. Such work should be performed only after reading this entire set of instructions.
- If the equipment is not used in the manner specified by the manufacturer, the protection provided by the equipment may be impaired.
- NEVER work alone.
- Before performing visual inspections, tests, or maintenance on this equipment, disconnect all sources of electric power. Assume that all circuits are live until they have been completely de-energized, tested, and tagged. Pay particular attention to the design of the power system. Consider all sources of power, including the possibility of backfeeding.
- Turn off all power supplying the digital meter and the equipment in which it is installed before working on it.
- Always use a properly rated voltage sensing device to confirm that all power is off.
- Before closing all covers and doors, inspect the work area for tools and objects that may have been left inside the equipment.
- When removing or installing panels do not allow them to extend into the energized bus.
- The successful operation of this equipment depends upon proper handling, installation, and operation. Neglecting fundamental installation requirements may lead to personal injury as well as damage to electrical equipment or other property.
- NEVER bypass external fusing.
- NEVER short the secondary of a PT.
- NEVER open circuit a CT; use the shorting block to short circuit the leads of the CT before removing the connection from the digital meter.
- Before performing Dielectric (Hi-Pot) or Megger testing on any equipment in which the digital meter is installed, disconnect all input and output wires to the digital meter. High voltage testing may damage electronic components contained in the digital meter.
- The digital meter should be installed in a suitable electrical enclosure.


**Failure to follow these instructions will result in death or serious injury**

PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

SECTION 2: QUICK SETUP



1. Connect auxiliary supply (control power) 44 to 277 VAC/DC to terminals 12 and 13 in order to power ON the digital meter.
  - Keep  pressed for two seconds, while powering up the digital meter.
  - The digital meter directly enters into the setup menu and displays **EDIT A.PRI 100.0**. This is the easiest way to enter the PROG menu setup.

Program the following setup parameters for accurate readings:

- A.pri, A.sec: Set these values to match your CT primary and secondary values. For example, if your CT ratio is 200:5, set A.pri = 200.0 and A.sec = 5.000.
- V.pri, V.sec:
  - Set these values to match the input voltage VLL of the circuit, if the input voltage < 480 VAC LL. For example, if the input voltage = 300 VAC LL, set V.pri = 300.0 and V.sec = 300.0.
  - Use a potential transformer (PT/VT), if the input voltage > 480 VAC LL. Set the V.pri and V.sec values to match the primary and secondary of the PT(VT) respectively. For example, if PT(VT) ratio is 11 kV:110, set V.pri = 11.00 k and V.sec = 110.0.
- Select one of the following systems according to your wiring configuration:
  - SYS: STAR/WYE for 3-phase 4-wire system
  - SYS: DLTA for 3-phase 3-wire system
  - SYS: 2-phase for 2-phase 3-wire system
  - SYS: Single-phase for single-phase 2-wire system

2. Connect the current transformers (CTs).

Ct1	CT2	CT3
1, 2	3, 4	5, 6

3. Connect the voltage inputs. Use PT(VT) if input voltage > 480 VAC LL.

Pt1	PT2	PT3	Neutral
8	9	10	11

4. RS 485 terminals (only for DM6200)

+ ve	- ve
7	14

NOTE: Refer to "SECTION 5: PROG MENU SETUP, CLR " on page 5, for details about PROG menu setup, A.pri, A.sec, V.pri, V.sec etc.

SECTION 3: INSTALLATION

Mechanical and Electrical Installation

Connecting cable

	Insulation Rating	Current Rating
Voltage Circuit	> 600 VAC	> 0.1 A
Current Circuit	> 600 VAC	> 7.5 A or 2.5 mm² (14 AWG) minimum

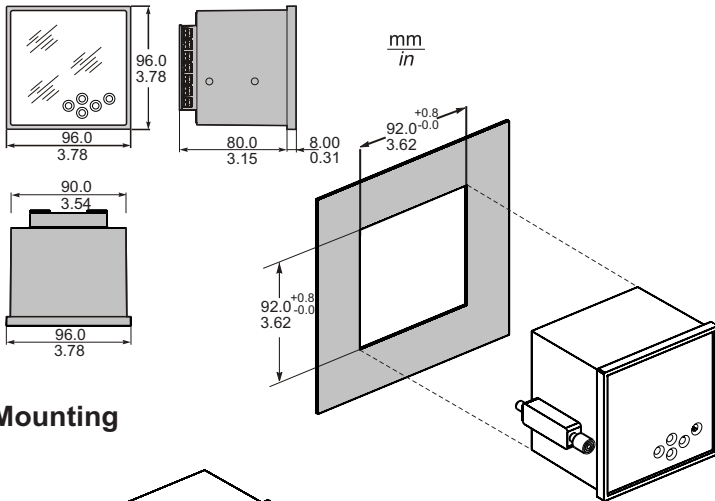
Tools and equipments

Driver	Torque driver preferred; may use hand screwdriver.
Tip	Phillips tip preferred, but you can also use flat. Do not use Pozidriv tip.
Screw head Diameter	3.5 mm (0.14 in.)
Shaft diameter	< 5 mm (0.2 in.). Diameter ≥ 5 mm (0.2 in.) will get stuck in the cover.
Torque	Tightening Torque: 0.25 to 1 N.m (2.21 to 8.85 lb-in) Loosening Torque: 0.8 to 1 N.m (7.08 to 8.85 lb-in) Torque > 1 N.m (8.85 lb-in) may strip the screw or break the cover.
Screw Travel	6 mm (0.24 in.) less wire thickness

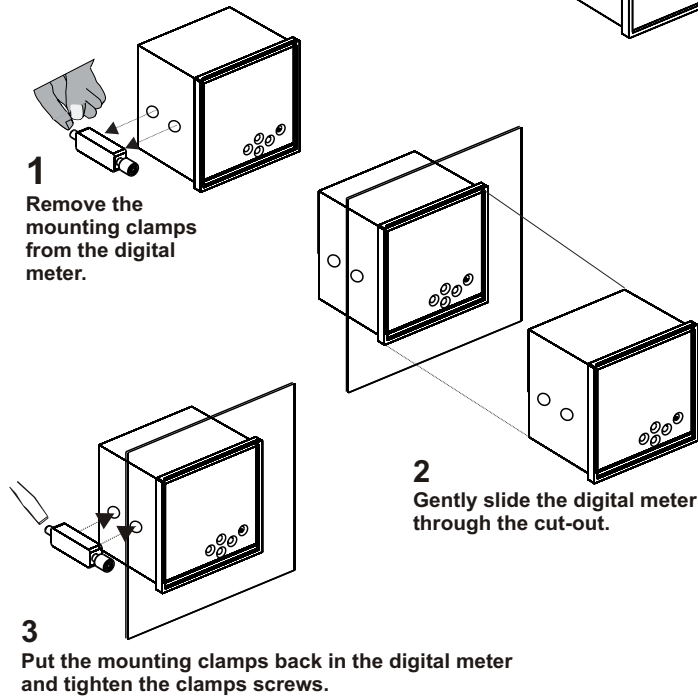
 Schneider Electric recommends the use of insulated sleeved U lugs (2.5 mm²/14 AWG) for wiring terminals.

NOTE: Installations should include a disconnecting device, like a switch or circuit breaker, with clear ON/OFF markings to turn-off the auxiliary supply (control power). The disconnecting device should be placed within the reach of the equipment and the operator.

Mechanical Dimensions and Panel Cut-out



Mounting



Connection Diagrams  
Supported System Types

System type	Meter configuration	Figure number
WYE	StAR/WyE	1
Delta, Open Delta	dLtA	2, 3
2-phase	2 Ph	4
Single-phase	1 Ph	5

Connection Diagram Symbols





Symbol	Description
	Current transformer (CT)
	Fuse
	Shorting block
	Potential transformer (PT)

Figure 1: 3-Phase 4-Wire WYE connection with 3 CTs and 3 PTs

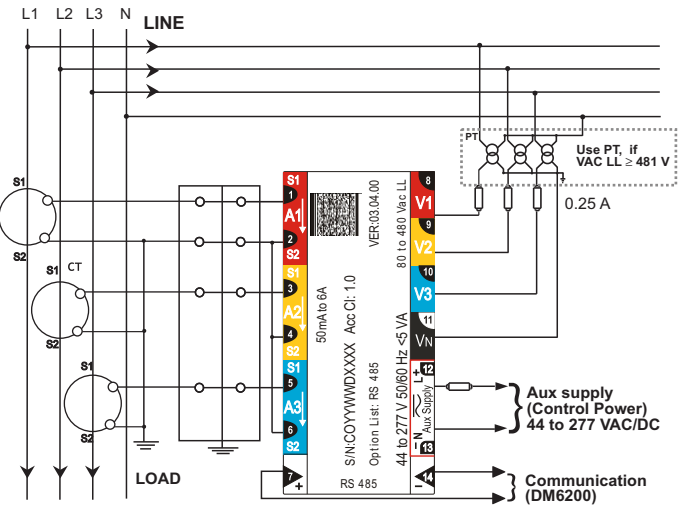
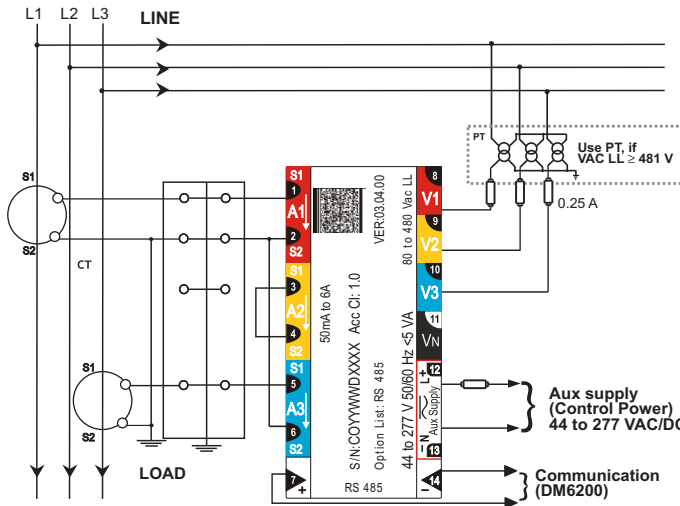
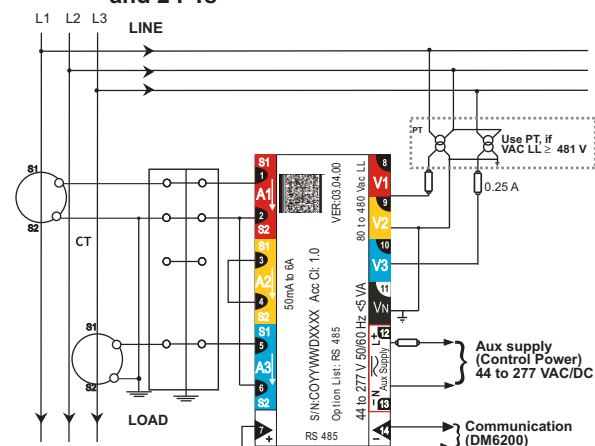
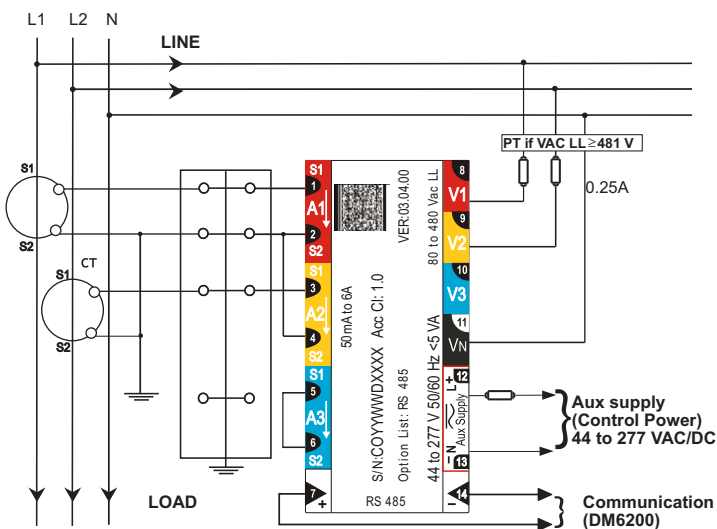
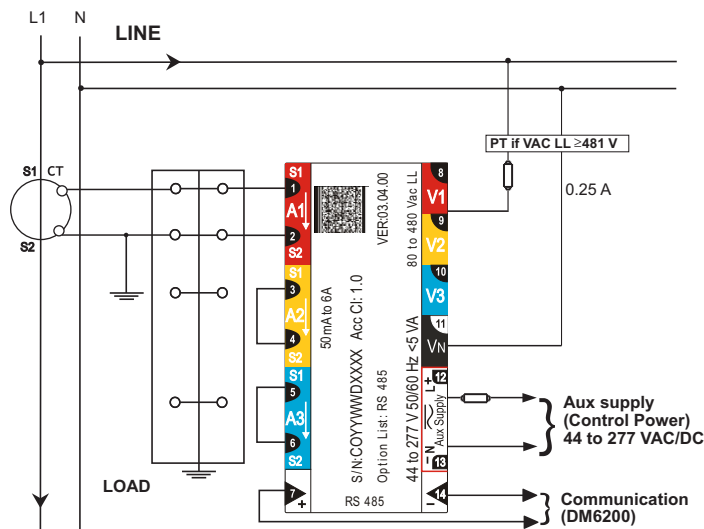


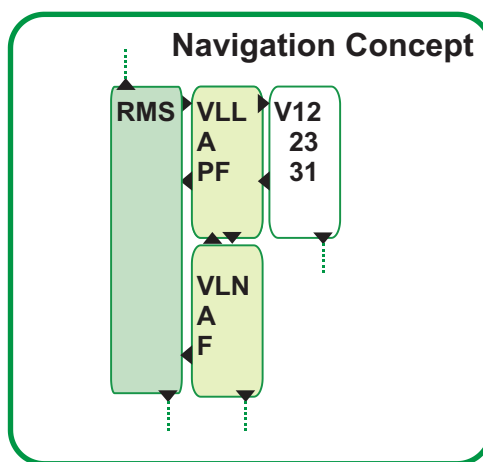
Figure 2: 3-phase 3-wire delta connection with 2 CTs and 3 PTs



**SECTION 3: INSTALLATION (Cont'd)****Connection Diagrams (Cont'd)****Figure 3: 3-phase 3-wire open delta connection with 2 CTs and 2 PTs****Figure 4: 2-phase 3-wire connection with 2 CTs****Figure 5: Single-phase connection with 1 CT****SECTION 4: KEYPAD SETUP****Keys Description**

	<b>Right Key:</b> Go forward to sub-parameters page.
	<b>Left Key:</b> Go back towards main parameters page.
	<b>Up Key:</b> Scroll up through the display pages at the level, within the same function.
	<b>Down Key:</b> Scroll down through the display pages at the same level through all the functions.
	<b>TURBO Key:</b> TURBO key provides one-touch access to the most commonly used parameters pages (factory set). The TURBO pages for DM6000 series digital meters are <b>RMS (home page)</b> , <b>VLL, A, PF</b> , <b>VLN, A, F</b> . If you are lost, use the TURBO key to quickly return to the RMS page.

See the online DM6000 user manual at [www.powerlogic.com](http://www.powerlogic.com) for more information on keys and other features.

**Keypad Operation**

The following example explains how you can navigate from the **RMS** page to the **VLN A F** page, back to **RMS** in DM6000 series digital meters.

1. From the RMS page, press . The display shows **VLL A PF**.
2. Press . The display shows **VLN A F**.
3. Press to go back to **RMS**.

**NOTE:** Use the and to navigate to the other pages on the same level. Use to go to the sub-parameter pages. Use to go back to the main parameter pages.

## SECTION 5: PROG MENU SETUP, CLR

### PROG Menu • Setup

The setup menu gives the complete list of user-programmable parameters.

- You must configure the digital meter to match the application settings before use. Otherwise, readings will be wrong.
- All the setup parameters can be re-programmed, using SET. However, the following settings critically determine the scaling of the measured readings: SYS (Star/wye or Delta or 2-phase or single-phase), Vpri, Vsec, Apri, Asec.
- The scaling may be used to minimize the errors in reading due to instrument transformer errors. However, wrong settings will introduce errors in readings on other running systems.

You can enter Setup menu in

- Edit mode – to view or edit set parameters
- View only mode – to view the set parameters

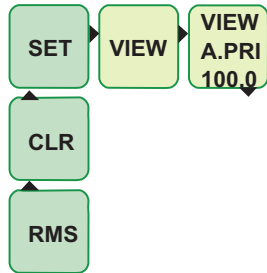
#### CAUTION

##### HAZARD OF UNINTENDED OPERATION

Only qualified personnel are authorized to set up the digital meter.

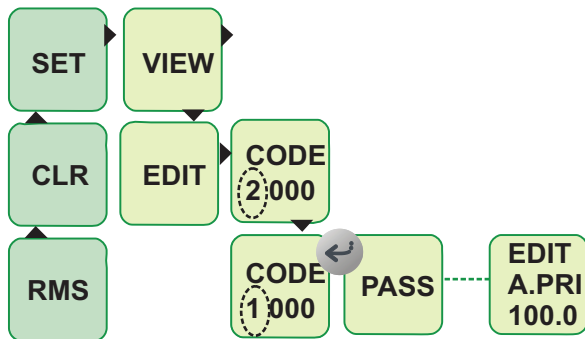
Failure to follow these instructions can result in injury or equipment damage.

### Enter Setup Menu in View (Read-Only) Mode



- From **RMS**, press  $\uparrow$ . The display shows **CLR**.
- Press  $\uparrow$ . The display shows **SET**.
- Press  $\rightarrow$ . The display shows **VIEW**.
- Press  $\rightarrow$ . Use  $\uparrow$  or  $\downarrow$  to scroll and view the setup parameters and their current settings.

### Enter Setup Menu in Edit Mode

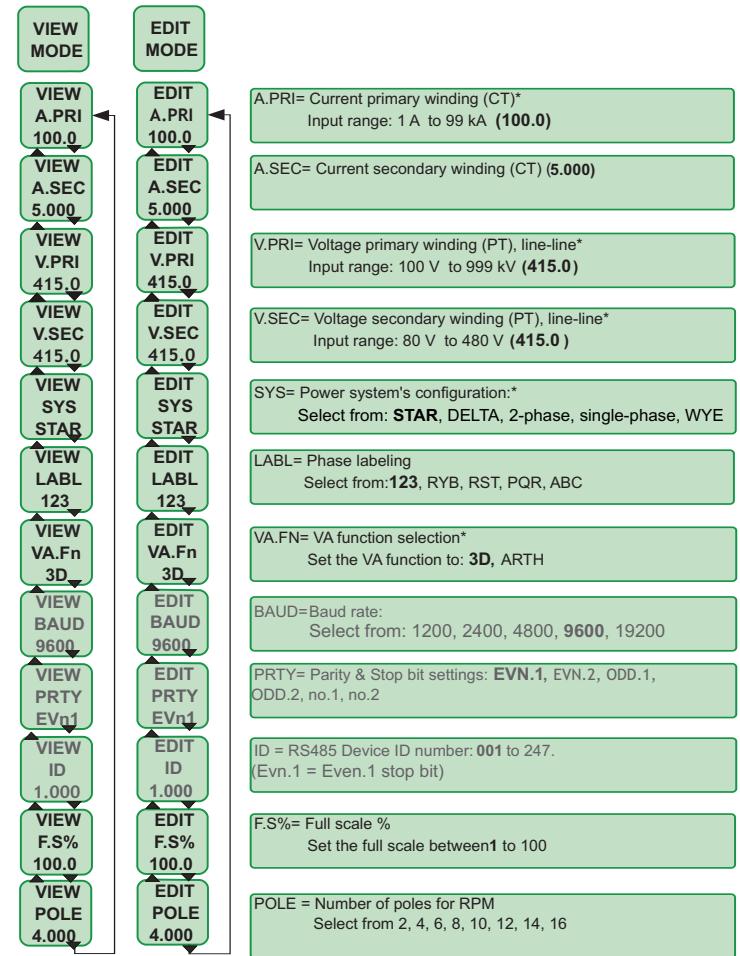


NOTE:  $\circ$  indicates blinking/editable  
 $\circ$  means blinking 1

- From **RMS** press  $\uparrow$ . The display shows **CLR**.
- Press  $\uparrow$ . The display shows **SET**.
- Press  $\rightarrow$ . The display shows **VIEW**.
- Press  $\downarrow$ . The display shows **EDIT**. **CODE** entry is required to edit the setup parameters.
- Press  $\rightarrow$  for two seconds. The display shows **CODE 2000** with blinking 2. The factory set **CODE** is 1000.
- Press  $\downarrow$ . The display shows **CODE 1000** with blinking 1.
- Press  $\rightarrow$  once or  $\rightarrow$  four times to accept the new **CODE** value. The display flashes **PASS** and then **EDIT A. PRI 100.0** indicating the successful entry to setup menu in edit mode.

NOTE: If you enter a wrong code, the display flashes **FAIL**, then displays **EDIT**. Repeat the procedure and make sure that you enter correct code.

### Setup Parameters in View and Edit Modes



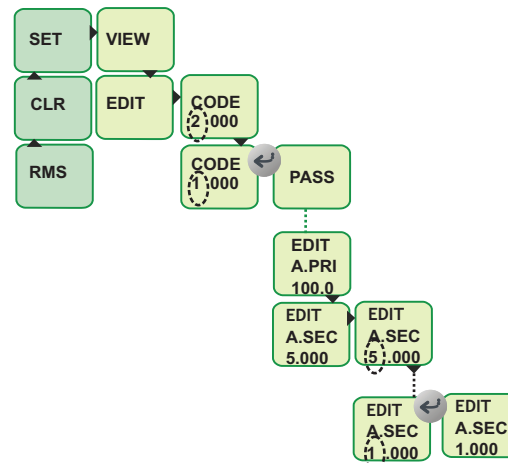
NOTE: Default Setup values are given in **BOLD**.

\*Changing these values while the device is in use, is not recommended. **BAUD**, **PRTY**, and **ID** are applicable only for DM6200.

### Edit Set Parameters

This example explains how to edit the **A.Sec** from **5.000** to **1.000** in the Edit Setup menu of DM6000 series digital meters. For easy understanding, the setup editing is explained in two parts: **edit and accept setup**, and **save new value in the setup**.

#### Edit and Accept Setup



NOTE:  $\circ$  indicates blinking/editable  
 $\circ$  means blinking 2







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